IN THIS CHAPTER YOU WILL LEARN:
1 About the functions of money and the components of the U.S. money supply.
2 What “backs” the money supply, making us willing to accept it as payment.
3 The makeup of the Federal Reserve and the U.S. banking system.
4 The functions and responsibilities of the Federal Reserve.

Money is a fascinating aspect of the economy:

Money bewitches people. They fret for it, and they sweat for it. They devise most ingenuous ways to get it, and most ingenuous ways to get rid of it. Money is the only commodity that is good for nothing but to be gotten rid of. It will not feed you, clothe you, shelter you, or amuse you unless you spend it or invest it. It imparts value only in parting. People will do almost anything for money, and money will do almost anything for people. Money is a captivating, circulating, masquerading puzzle.¹

In this chapter and the two chapters that follow, we want to unmask the critical role of money and the monetary system in the economy. When the monetary system is working properly, it provides the

The Functions of Money

Just what is money? There is an old saying that “money is what money does.” In a general sense, anything that performs the functions of money is money. Here are those functions:

• **Medium of exchange** First and foremost, money is a medium of exchange that is usable for buying and selling goods and services. A bakery worker does not want to be paid 200 bagels per week. Nor does the bakery owner want to receive, say, halibut in exchange for bagels. Money, however, is readily acceptable as payment. As we saw in Chapter 2, money is a social invention with which resource suppliers and producers can be paid and that can be used to buy any of the full range of items available in the marketplace. As a medium of exchange, money allows society to escape the complications of barter. And because it provides a convenient way of exchanging goods, money enables society to gain the advantages of geographic and human specialization.

• **Unit of account** Money is also a unit of account. Society uses monetary units—dollars, in the United States—as a yardstick for measuring the relative worth of a wide variety of goods, services, and resources. Just as we measure distance in miles or kilometers, we gauge the value of goods in dollars.

  With money as an acceptable unit of account, the price of each item need be stated only in terms of the monetary unit. We need not state the price of cows in terms of corn, crayons, and cranberries. Money aids rational decision making by enabling buyers and sellers to easily compare the prices of various goods, services, and resources. It also permits us to define debt obligations, determine taxes owed, and calculate the nation’s GDP.

• **Store of value** Money also serves as a store of value that enables people to transfer purchasing power from the present to the future. People normally do not spend all their incomes on the day they receive them. In order to buy things later, they store some of their wealth as money. The money you place in a safe or a checking account will still be available to you a few weeks or months from now. When inflation is nonexistent or mild, holding money is a relatively risk-free way to store your wealth for later use.

  People can, of course, choose to hold some or all of their wealth in a wide variety of assets besides money. These include real estate, stocks, bonds, precious metals such as gold, and even collectible items like fine art or comic books. But a key advantage that money has over all other assets is that it has the most liquidity, or spendability.

  An asset’s liquidity is the ease with which it can be converted quickly into the most widely accepted and easily spent form of money, cash, with little or no loss of purchasing power. The more liquid an asset is, the more quickly it can be converted into cash and used for either purchases of goods and services or purchases of other assets.

  Levels of liquidity vary radically. By definition, cash is perfectly liquid. By contrast, a house is highly illiquid for two reasons. First, it may take several months before a willing buyer can be found and a sale negotiated so that its value can be converted into cash. Second, there is a loss of purchasing power when the house is sold because numerous fees have to be paid to real estate agents and other individuals in order to complete the sale.

  As we are about to discuss, our economy uses several different types of money including cash, coins, checking account deposits, savings account deposits, and even more exotic things like deposits in money market mutual funds. As we describe the various forms of money in detail, take the time to compare their relative levels of liquidity—both with each other and as compared to other assets like stocks, bonds, and real estate. Cash is perfectly liquid. Other forms of money are highly liquid, but less liquid than cash.

The Components of the Money Supply

Money is a “stock” of some item or group of items (unlike income, for example, which is a “flow”). Societies have used many items as money, including whales’ teeth, circular stones, elephant-tail bristles, gold coins, furs, and pieces of paper. Anything that is widely accepted as a medium of exchange can serve as money. In the United States,
currency is not the only form of money. As you will see, certain debts of government and financial institutions also are used as money.

**Money Definition M1**
The narrowest definition of the U.S. money supply is called *M1*. It consists of:

- Currency (coins and paper money) in the hands of the public.
- All checkable deposits (all deposits in commercial banks and “thrift” or savings institutions on which checks of any size can be drawn).

Government and government agencies supply coins and paper money. Commercial banks (“banks”) and savings institutions (“thrifts”) provide checkable deposits. Figure 31.1a shows the amounts of each category of money in the *M1* money supply.

**Currency: Coins + Paper Money** The currency of the United States consists of metal coins and paper money. The coins are issued by the U.S. Treasury while the paper money consists of Federal Reserve Notes issued by the Federal Reserve System (the U.S. central bank). The coins are minted by the U.S. Mint while the paper money is printed by the Bureau of Engraving and Printing. Both the U.S. Mint and the Bureau of Engraving and Printing are part of the U.S. Department of the Treasury.

As with the currencies of other countries, the currency of the United States is token money. This means that the face value of any piece of currency is unrelated to its intrinsic value—the value of the physical material (metal or paper and ink) out of which that piece of currency is constructed. Governments make sure that face values exceed intrinsic values in order to discourage people from destroying coins and bills in order to resell the material that they are made out of. For instance, if 50-cent pieces each contained 75 cents’ worth of metal, then it would be profitable to melt them down and sell the metal. Fifty-cent pieces would disappear from circulation very quickly.

Figure 31.1a shows that currency (coins and paper money) constitutes 56 percent of the *M1* money supply in the United States.

**Checkable Deposits** The safety and convenience of checks has made checkable deposits a large component of the *M1* money supply. You would not think of

*These categories include other, quantitatively smaller components such as traveler’s checks.

stuffing $4896 in bills in an envelope and dropping it in a mailbox to pay a debt. But writing and mailing a check for a large sum is commonplace. The person cashing a check must endorse it (sign it on the reverse side); the writer of the check subsequently receives a record of the cashed check as a receipt attesting to the fulfillment of the obligation. Similarly, because the writing of a check requires endorsement, the theft or loss of your checkbook is not nearly as calamitous as losing an identical amount of currency. Finally, it is more convenient to write a check than to transport and count out a large sum of currency. For all these reasons, checkable deposits (checkbook money) are a large component of the stock of money in the United States. About 44 percent of M1 is in the form of checkable deposits, on which checks can be drawn.

It might seem strange that checking account balances are regarded as part of the money supply. But the reason is clear: Checks are nothing more than a way to transfer the ownership of deposits in banks and other financial institutions and are generally acceptable as a medium of exchange. Although checks are less generally accepted than currency for small purchases, for major purchases most sellers willingly accept checks as payment. Moreover, people can convert checkable deposits into paper money and coins on demand; checks drawn on those deposits are thus the equivalent of currency.

To summarize:

Money, $M1 = currency + checkable deposits$

Institutions That Offer Checkable Deposits
In the United States, a variety of financial institutions allow customers to write checks in any amount on the funds they have deposited. Commercial banks are the primary depository institutions. They accept the deposits of households and businesses, keep the money safe until it is demanded via checks, and in the meantime use it to make available a wide variety of loans. Commercial bank loans provide short-term financial capital to businesses, and they finance consumer purchases of automobiles and other durable goods.

Savings and loan associations (S&Ls), mutual savings banks, and credit unions supplement the commercial banks and are known collectively as savings or thrift institutions, or simply “thrifts.” Savings and loan associations and mutual savings banks accept the deposits of households and businesses and then use the funds to finance housing mortgages and to provide other loans. Credit unions accept deposits from and lend to “members,” who usually are a group of people who work for the same company.

The checkable deposits of banks and thrifts are known variously as demand deposits, NOW (negotiable order of withdrawal) accounts, ATS (automatic transfer service) accounts, and share draft accounts. Their commonality is that depositors can write checks on them whenever, and in whatever amount, they choose.

Two Qualifications We must qualify our discussion in two important ways. First, currency held by the U.S. treasury, the Federal Reserve banks, commercial banks, and thrift institutions is excluded from M1 and other measures of the money supply. A paper dollar or four quarters in the billfold of, say, Emma Buck obviously constitutes just $1 of the money supply. But if we counted currency held by banks as part of the money supply, the same $1 would count for $2 of money supply when Emma deposited the currency into her checkable deposit in her bank. It would count for $1 of checkable deposit owned by Buck and also $1 of currency in the bank’s cash drawer or vault. By excluding currency held by banks when determining the total supply of money, we avoid this problem of double counting.

Also excluded from the money supply are any checkable deposits of the government (specifically, the U.S. Treasury) or the Federal Reserve that are held by commercial banks or thrift institutions. This exclusion is designed to enable a better assessment of the amount of money available to the private sector for potential spending. The amount of money available to households and businesses is of keen interest to the Federal Reserve in conducting its monetary policy (a topic we cover in detail in Chapter 33).

Money Definition M2
A second and broader definition of money includes M1 plus several near-mones. Near-mones are certain highly liquid financial assets that do not function directly or fully as a medium of exchange but can be readily converted into currency or checkable deposits. There are three categories of near-mones included in the M2 definition of money:

- **Savings deposits, including money market deposit accounts** A depositor can easily withdraw funds from a savings account at a bank or thrift or simply request that the funds be transferred from a savings account to a checkable account. A person can also withdraw funds from a money market deposit account (MMDA), which is an interest-bearing account containing a variety of interest-bearing short-term securities. MMDAs, however, have a minimum-balance requirement and a limit on how often a person can withdraw funds.
- **Small (less than $100,000) time deposits** Funds from time deposits become available at their
maturity. For example, a person can convert a 6-month time deposit (“certificate of deposit,” or “CD”) to currency without penalty 6 months or more after it has been deposited. In return for this withdrawal limitation, the financial institution pays a higher interest rate on such deposits than it does on its MMDAs. Also, a person can “cash in” a CD at any time but must pay a severe penalty.

- **Money market mutual funds held by individuals** By making a telephone call, using the Internet, or writing a check for $500 or more, a depositor can redeem shares in a **money market mutual fund (M3M)** offered by a mutual fund company. Such companies use the combined funds of individual shareholders to buy interest-bearing short-term credit instruments such as certificates of deposit and U.S. government securities. Then they can offer interest on the M3M accounts of the shareholders (depositors) who jointly own those financial assets. The M3Ms in M2 include only the M3M accounts held by individuals; those held by businesses and other institutions are excluded.

All three categories of near-monies imply substantial liquidity. Thus, in equation form,

\[ M1 + \text{savings deposits,} \]
\[ \text{including MMDAs + small} \]
\[ \text{(less than $100,000) time deposits} \]
\[ + \text{M3Ms held by individuals} \]

Money, M2 =

In summary, M2 includes the immediate medium-of-exchange items (currency and checkable deposits) that constitute M1 plus certain near-monies that can be easily converted into currency and checkable deposits. In Figure 31.1b we see that the addition of all these items yields an M2 money supply that is about five times larger than the narrower M1 money supply. (Key Question 4)

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**QUICK REVIEW 31.1**

- Money serves as a medium of exchange, a unit of account, and a store of value.
- The narrow M1 definition of money includes currency held by the public plus checkable deposits in commercial banks and thrift institutions.
- Thrift institutions as well as commercial banks offer accounts on which checks can be written.
- The M2 definition of money includes M1 plus savings deposits, including money market deposit accounts, small (less than $100,000) time deposits, and money market mutual fund balances held by individuals.

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**CONSIDER THIS . . .**

### Are Credit Cards Money?

You may wonder why we have ignored credit cards such as Visa and MasterCard in our discussion of how the money supply is defined. After all, credit cards are a convenient way to buy things and account for about 25% of the dollar value of all transactions in the United States. The answer is that a credit card is not money. Rather, it is a convenient means of obtaining a short-term loan from the financial institution that issued the card.

What happens when you purchase an item with a credit card? The bank that issued the card will reimburse the store, charging it a transaction fee, and later you will reimburse the bank. Rather than reducing your cash or checking account with each purchase, you bunch your payments once a month. You may have to pay an annual fee for the services provided, and if you pay the bank in installments, you will pay a sizable interest charge on the loan. Credit cards are merely a means of deferring or postponing payment for a short period. Your checking account balance that you use to pay your credit card bill is money; the credit card is not money.*

Although credit cards are not money, they allow individuals and businesses to “economize” in the use of money. Credit cards enable people to hold less currency in their billfolds and, prior to payment due dates, fewer checkable deposits in their bank accounts. Credit cards also help people coordinate the timing of their expenditures with their receipt of income.

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* A bank debit card, however, is very similar to a check in your checkbook. Unlike a purchase with a credit card, a purchase with a debit card creates a direct “debit” (a subtraction) from your checking account balance. That checking account balance is money—it is part of M1.

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**What “Backs” the Money Supply?**

The money supply in the United States essentially is “backed” (guaranteed) by government’s ability to keep the value of money relatively stable. Nothing more!

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**Money as Debt**

The major components of the money supply—paper money and checkable deposits—are debts, or promises to pay. In the United States, paper money is the circulating debt of the Federal Reserve Banks. Checkable deposits are the debts of commercial banks and thrift institutions.
Paper currency and checkable deposits have no intrinsic value. A $5 bill is just an inscribed piece of paper. A checkable deposit is merely a bookkeeping entry. And coins, we know, have less intrinsic value than their face value. Nor will government redeem the paper money you hold for anything tangible, such as gold. To many people, the fact that the government does not back the currency with anything tangible seems implausible and insecure. But the decision not to back the currency with anything tangible was made for a very good reason. If the government backed the currency with something tangible like gold, then the supply of money would vary with how much gold was available. By not backing the currency, the government avoids this constraint and indeed receives a key freedom—the ability to provide as much or as little money as needed to maintain the value of money and to best suit the economic needs of the country. In effect, by choosing not to back the currency, the government has chosen to give itself the ability to freely “manage” the nation’s money supply. Its monetary authorities attempt to provide the amount of money needed for the particular volume of business activity that will promote full employment, price-level stability, and economic growth.

Nearly all today’s economists agree that managing the money supply is more sensible than linking it to gold or to some other commodity whose supply might change arbitrarily and capriciously. For instance, if we used gold to back the money supply so that gold was redeemable for money and vice versa, then a large increase in the nation’s gold stock as the result of a new gold discovery might increase the money supply too rapidly and thereby trigger rapid inflation. Or a long-lasting decline in gold production might reduce the money supply to the point where recession and unemployment resulted.

In short, people cannot convert paper money into a fixed amount of gold or any other precious commodity. Money is exchangeable only for paper money. If you ask the government to redeem $5 of your paper money, it will swap one paper $5 bill for another bearing a different serial number. That is all you can get. Similarly, checkable deposits can be redeemed not for gold but only for paper money, which, as we have just seen, the government will not redeem for anything tangible.

**Value of Money**

So why are currency and checkable deposits money, whereas, say, Monopoly (the game) money is not? What gives a $20 bill or a $100 checking account entry its value? The answer to these questions has three parts.

**Acceptability** Currency and checkable deposits are money because people accept them as money. By virtue of long-standing business practice, currency and checkable deposits perform the basic function of money: They are acceptable as a medium of exchange. We accept paper money in exchange because we are confident it will be exchangeable for real goods, services, and resources when we spend it.

**Legal Tender** Our confidence in the acceptability of paper money is strengthened because government has designated currency as legal tender. Specifically, each bill contains the statement “This note is legal tender for all debts, public and private.” That means paper money is a valid and legal means of payment of any debt that was contracted in dollars. (But private firms and government are not mandated to accept cash. It is not illegal for them to specify payment in noncash forms such as checks, cashier’s checks, money orders, or credit cards.)

The general acceptance of paper currency in exchange is more important than the government’s decree that money is legal tender, however. The government has never decreed checks to be legal tender, and yet they serve as such in many of the economy’s exchanges of goods, services, and resources. But it is true that government agencies—the Federal Deposit Insurance Corporation (FDIC) and the National Credit Union Administration (NCUA)—insure individual deposits of up to $100,000 at commercial banks and thrifts. That fact enhances our willingness to use checkable deposits as a medium of exchange.

**Relative Scarcity** The value of money, like the economic value of anything else, depends on its supply and demand. Money derives its value from its scarcity relative to its utility (its want-satisfying power). The utility of money lies in its capacity to be exchanged for goods and services, now or in the future. The economy’s demand for money thus depends on the total dollar volume of transactions in any period plus the amount of money individuals and businesses want to hold for future transactions. With a reasonably constant demand for money, the supply of money provided by the monetary authorities will determine the domestic value or “purchasing power” of the monetary unit (dollar, yen, peso, or whatever).

**Money and Prices**

The purchasing power of money is the amount of goods and services a unit of money will buy. When money rapidly loses its purchasing power, it loses its role as money.

**The Purchasing Power of the Dollar** The amount a dollar will buy varies inversely with the price level; that is, a reciprocal relationship exists between the general price level and the purchasing power of the dollar. When the consumer price index or “cost-of-living” index goes up, the value of the dollar goes down, and vice versa. Higher
prices lower the value of the dollar because more dollars are needed to buy a particular amount of goods, services, or resources. For example, if the price level doubles, the value of the dollar declines by one-half, or 50 percent.

Conversely, lower prices increase the purchasing power of the dollar because fewer dollars are needed to obtain a specific quantity of goods and services. If the price level falls by, say, one-half, or 50 percent, the purchasing power of the dollar doubles.

In equation form, the relationship looks like this:

\[ SV = 1/P \]

To find the value of the dollar \( SV \), divide 1 by the price level \( P \) expressed as an index number (in hundredths). If the price level is 1, then the value of the dollar is 1. If the price level rises to, say, 1.20, \( SV \) falls to .833; a 20 percent increase in the price level reduces the value of the dollar by 16.67 percent. Check your understanding of this reciprocal relationship by determining the value of \( SV \) and its percentage rise when \( P \) falls by 20 percent from $1 to .80.

(Key Question 6)

**Inflation and Acceptability** In Chapter 26 we noted situations in which a nation’s currency became worthless and unacceptable in exchange. These instances of runaway inflation, or hyperinflation, happened when the government issued so many pieces of paper currency that the purchasing power of each of those units of money was almost totally undermined. The infamous post–World War I hyperinflation in Germany is an example. In December 1919 there were about 50 billion marks in circulation. Four years later there were 496,585,345,900 billion marks in circulation! The result? The German mark in 1923 was worth an infinitesimal fraction of its 1919 value.1

Runaway inflation may significantly depreciate the value of money between the time it is received and the time it is spent. Rapid declines in the value of a currency may cause it to cease being used as a medium of exchange. Businesses and households may refuse to accept paper money in exchange because they do not want to bear the loss in its value that will occur while it is in their possession. (All this despite the fact that the government says that paper currency is legal tender!) Without an acceptable domestic medium of exchange, the economy may simply revert to barter. Alternatively, more stable currencies such as the U.S. dollar or European euro may come into widespread use. At the extreme, a country may adopt a foreign currency as its own official currency as a way to counter hyperinflation.

Similarly, people will use money as a store of value only as long as there is no sizable deterioration in the value of that money because of inflation. And an economy can effectively employ money as a unit of account only when its purchasing power is relatively stable. A monetary yardstick that no longer measures a yard (in terms of purchasing power) does not permit buyers and sellers to establish the terms of trade clearly. When the value of the dollar is declining rapidly, sellers do not know what to charge and buyers do not know what to pay.

**Stabilizing Money’s Purchasing Power** Rapidly rising price levels (rapid inflation) and the consequent erosion of the purchasing power of money typically result from imprudent economic policies. Since the purchasing power of money and the price level vary inversely, stabilization of the purchasing power of a nation’s money requires stabilization of the nation’s price level. Such price-level stability (2–3 percent annual inflation) mainly necessitates intelligent management or regulation of the nation’s money supply and interest rates (monetary policy). It also requires appropriate fiscal policy supportive of the efforts of the nation’s monetary authorities to hold down inflation. In the United States, a combination of legislation, government policy, and social practice inhibits imprudent expansion of the money supply that might jeopardize money’s purchasing power. The critical role of the U.S. monetary authorities (the Federal Reserve) in maintaining the purchasing power of the dollar is the subject of Chapter 33. For now, simply note that they make available a particular quantity of money, such as M2 in Figure 31.1, and can change that amount through their policy tools.

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The Federal Reserve and the Banking System

In the United States, the “monetary authorities” we have been referring to are the members of the Board of Governors of the Federal Reserve System (the “Fed”). As shown in Figure 31.2, the Board directs the activities of the 12 Federal Reserve Banks, which in turn control the lending activity of the nation’s banks and thrift institutions. The Fed’s major goal is to control the money supply. But since checkable deposits in banks are such a large part of the money supply, an important part of its duties involves assuring the stability of the banking system.

Historical Background

Early in the twentieth century, Congress decided that centralization and public control were essential for an efficient banking system. Decentralized, unregulated banking had fostered the inconvenience and confusion of numerous private bank notes being used as currency. It also had resulted in occasional episodes of monetary mismanagement such that the money supply was inappropriate to the needs of the economy. Sometimes “too much” money precipitated rapid inflation; other times “too little money” stunted the economy’s growth by hindering the production and exchange of goods and services. No single entity was charged with creating and implementing nationally consistent banking policies.

Furthermore, acute problems in the banking system occasionally erupted when banks either closed down or insisted on immediate repayment of loans to prevent their own failure. At such times, a banking crisis could emerge, with individuals and businesses who had lost confidence in their banks attempting to simultaneously withdraw all of their money—thereby further crippling the already weakened banks.

An unusually acute banking crisis in 1907 motivated Congress to appoint the National Monetary Commission to study the monetary and banking problems of the economy and to outline a course of action for Congress. The result was the Federal Reserve Act of 1913.

Let’s examine the various parts of the Federal Reserve System and their relationship to one another.

Board of Governors

The central authority of the U.S. money and banking system is the Board of Governors of the Federal Reserve System. The U.S. president, with the confirmation of the Senate, appoints the seven Board members. Terms are 14 years and staggered so that one member is replaced every 2 years. In addition, new members are appointed when resignations occur. The president selects the chairperson and vice-chairperson of the Board from among the members. Those officers serve 4-year terms and can be reappointed to new 4-year terms by the president. The long-term appointments provide the Board with continuity, experienced membership, and independence from political pressures that could result in inflation.

The 12 Federal Reserve Banks

The 12 Federal Reserve Banks, which blend private and public control, collectively serve as the nation’s “central bank.” These banks also serve as bankers’ banks.

FIGURE 31.2 Framework of the Federal Reserve System and its relationship to the public. With the aid of the Federal Open Market Committee, the Board of Governors makes the basic policy decisions that provide monetary control of the U.S. money and banking systems. The 12 Federal Reserve Banks implement these decisions.
Central Bank Most nations have a single central bank—for example, Britain’s Bank of England or Japan’s Bank of Japan. The United States’ central bank consists of 12 banks whose policies are coordinated by the Fed’s Board of Governors. The 12 Federal Reserve Banks accommodate the geographic size and economic diversity of the United States and the nation’s large number of commercial banks and thrifts.

Figure 31.3 locates the 12 Federal Reserve Banks and indicates the district that each serves. These banks implement the basic policy of the Board of Governors.

Quasi-Public Banks The 12 Federal Reserve Banks are quasi-public banks, which blend private ownership and public control. Each Federal Reserve Bank is owned by the private commercial banks in its district. (Federally chartered banks are required to purchase shares of stock in the Federal Reserve Bank in their district.) But the Board of Governors, a government body, sets the basic policies that the Federal Reserve Banks pursue.

Despite their private ownership, the Federal Reserve Banks are in practice public institutions. Unlike private firms, they are not motivated by profit. The policies they follow are designed by the Board of Governors to promote the well-being of the economy as a whole. Thus, the activities of the Federal Reserve Banks are frequently at odds with the profit motive. Also, the Federal Reserve Banks do not compete with commercial banks. In general, they do not deal with the public; rather, they interact with the government and commercial banks and thrifts.

Bankers’ Banks The Federal Reserve Banks are “bankers’ banks.” They perform essentially the same functions for banks and thrifts as those institutions perform for the public. Just as banks and thrifts accept the deposits of and make loans to the public, so the central banks accept the deposits of and make loans to banks and thrifts. Normally, these loans average only about $150 million a day. But in emergency circumstances the Federal Reserve Banks become the “lender of last resort” to the banking system and can lend out as much as needed to ensure that banks and thrifts can meet their cash obligations. On the day after terrorists attacked the United States on September 11, 2001, the Fed lent $45 billion to U.S. banks and thrifts. The Fed wanted to make sure that the destruction and disruption in New York City and the Washington, D.C., area did not precipitate a nationwide banking crisis.

FIGURE 31.3 The 12 Federal Reserve Districts. The Federal Reserve System divides the United States into 12 districts, each having one central bank and in some instances one or more branches of the central bank.

Although it is not their goal, the Federal Reserve Banks have actually operated profitably, largely as a result of the Treasury debts they hold. Part of the profit is used to pay 6 percent annual dividends to the commercial banks that hold stock in the Federal Reserve Banks; the remaining profit is usually turned over to the U.S. Treasury.
But the Federal Reserve Banks have a third function, which banks and thrifts do not perform: They issue currency. Congress has authorized the Federal Reserve Banks to put into circulation Federal Reserve Notes, which constitute the economy’s paper money supply. (Key Question 8)

**FOMC**
The Federal Open Market Committee (FOMC) aids the Board of Governors in conducting monetary policy. The FOMC is made up of 12 individuals:
- The seven members of the Board of Governors.
- The president of the New York Federal Reserve Bank.
- Four of the remaining presidents of Federal Reserve Banks on a 1-year rotating basis.

The FOMC meets regularly to direct the purchase and sale of government securities (bills, notes, bonds) in the open market in which such securities are bought and sold on a daily basis. We will find in Chapter 33 that the purpose of these aptly named open-market operations is to control the nation’s money supply and influence interest rates. The Federal Reserve Bank in New York City conducts most of the Fed’s open-market operations.

**Commercial Banks and Thrifts**
There are about 7300 commercial banks. Roughly three-fourths are state banks. These are private banks chartered (authorized) by the individual states to operate within those states. One-fourth are private banks chartered by the Federal government to operate nationally; these are national banks. Some of the U.S. national banks are very large, ranking among the world’s largest financial institutions (see Global Perspective 31.1).

The 11,000 thrift institutions—most of which are credit unions—are regulated by agencies separate and apart from the Board of Governors and the Federal Reserve Banks. For example, the operations of savings and loan associations are regulated and monitored by the Treasury Department’s Office of Thrift Supervision. But the thrifts are subject to monetary control by the Federal Reserve System. In particular, like the banks, thrifts are required to keep a certain percentage of their checkable deposits as “reserves.” In Figure 31.2 we use dashed arrows to indicate that the thrift institutions are partially subject to the control of the Board of Governors and the central banks. Decisions concerning monetary policy affect the thrifts along with the commercial banks.

**Fed Functions and the Money Supply**
The Fed performs several functions, some of which we have already identified but they are worth repeating:

- **Issuing currency** The Federal Reserve Banks issue Federal Reserve Notes, the paper currency used in the U.S. monetary system. (The Federal Reserve Bank that issued a particular bill is identified in black in the upper left of the front of the newly designed bills. “A1,” for example, identifies the Boston bank, “B2” the New York bank, and so on.)
- **Setting reserve requirements and holding reserves** The Fed sets reserve requirements, which are the fractions of checking account balances that banks must maintain as currency reserves. The central banks accept as deposits from the banks and thrifts any portion of their mandated reserves not held as vault cash.
- **Lending money** From time to time the Fed lends money to banks and thrifts and charges them an interest rate called the discount rate. In times of financial emergencies, the Fed serves as a lender of last resort to critical parts of the U.S. financial industry.
- **Providing for check collection** The Fed provides the banking system with a means for collecting checks. If Sue writes a check on her Miami bank or thrift to Joe, who deposits it in his Dallas bank or thrift, how does the Dallas bank collect the money represented by the check drawn against the Miami bank?

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**Global Perspective 31.1**

The World’s 12 Largest Financial Institutions

The world’s 12 largest private sector financial institutions are headquartered in Europe, Japan, and the United States (2007 data).

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<tr>
<th>Assets (trillions of U.S. dollars)</th>
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<td>HSBC Group (U.K.)</td>
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<td>JBS (Switzerland)</td>
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<td>Royal Bank of Scotland (U.K.)</td>
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<td>ING Group (Netherlands)</td>
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<td>Mitsubishi UFJ (Japan)</td>
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<td>Deutsche Bank Group (Germany)</td>
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<td>Bank of America (U.S.)</td>
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<td>Allianz Worldwide (Germany)</td>
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<td>JPMorgan Chase (U.S.)</td>
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Federal Reserve Independence

Congress purposely established the Fed as an independent agency of government. The objective was to protect the Fed from political pressures so that it could effectively control the money supply and maintain price stability. Political pressures on Congress and the executive branch may at times result in inflationary fiscal policies, including tax cuts and special-interest spending. If Congress and the executive branch also controlled the nation’s monetary policy, citizens and lobbying groups undoubtedly would pressure elected officials to keep interest rates low even though at times high interest rates are necessary to reduce aggregate demand and thus control inflation. An independent monetary authority (the Fed) can take actions to increase interest rates when higher rates are needed to stem inflation. Studies show that countries that have independent central banks like the Fed have lower rates of inflation, on average, than countries that have little or no central bank independence.

Recent Developments in Money and Banking

The banking industry is undergoing a series of sweeping changes, spurred by competition from other financial institutions, the globalization of banking, and advances in information technology.

The Relative Decline of Banks and Thrifts

Banks and thrifts are just two of several types of firms that offer financial services. Table 31.1 lists the major categories of firms within the U.S. financial services industry and gives examples of firms in each category. Although banks and thrifts remain the only institutions that offer checkable deposits that have no restrictions on either the number or size of checks, their share of total financial assets (value of things owned) is declining. In 1980 banks and thrifts together held nearly 60 percent of financial assets in the United States. By 2007 that percentage had declined to about 22 percent.

Where did the declining shares of the banks and thrifts go? Pension funds, insurance firms, and particularly securities firms and mutual fund companies expanded their shares of financial assets. (Mutual fund companies offer shares of a wide array of stock and bond funds, as well as the previously mentioned money market funds.) Clearly, between 1980 and 2007, U.S. households and businesses channeled relatively more saving away from banks and thrifts and toward other financial institutions. Those other institutions generally offered higher rates of return on funds than did banks and thrifts, largely because they could participate more fully in national and international stock and bond markets.

Consolidation among Banks and Thrifts

During the past two decades, many banks have purchased bankrupt thrifts or have merged with other banks. Two examples of mergers of major banks are the mergers of J.P. Morgan Chase and Bank One in 2004 and the purchase of LaSalle Bank by Bank of America in 2007. Major savings and loans also have merged. The purpose of such mergers is to create large regional or national banks or thrifts that can compete more effectively in the financial services industry. Consolidation of traditional banking is expected to continue; there are 5200 fewer banks today than there were in 1990. Today, the seven largest U.S. banks and thrifts hold roughly one-third of total bank deposits.

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Answer: The Fed handles it by adjusting the reserves (deposits) of the two banks.

- **Acting as fiscal agent** The Fed acts as the fiscal agent (provider of financial services) for the Federal government. The government collects huge sums through taxation, spends equally large amounts, and sells and redeems bonds. To carry out these activities, the government uses the Fed’s facilities.

- **Supervising banks** The Fed supervises the operations of banks. It makes periodic examinations to assess bank profitability, to ascertain that banks perform in accordance with the many regulations to which they are subject, and to uncover questionable practices or fraud.\(^5\)

- **Controlling the money supply** Finally, and most important, the Fed has ultimate responsibility for regulating the supply of money, and this in turn enables it to influence interest rates. The major task of the Fed is to manage the money supply (and thus interest rates) according to the needs of the economy. This involves making an amount of money available that is consistent with high and rising levels of output and employment and a relatively constant price level. While all the other functions of the Fed are routine activities or have a service nature, managing the nation’s money supply requires making basic, but unique, policy decisions. (We discuss those decisions in detail in Chapter 33.)

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\(^5\)The Fed is not alone in this task of supervision. The individual states supervise all banks that they charter. The Comptroller of the Currency supervises all national banks, and the Office of Thrift Supervision supervises all thrifts. Also, the Federal Deposit Insurance Corporation supervises all banks and thrifts whose deposits it insures.
TABLE 31.1 Major U.S. Financial Institutions

<table>
<thead>
<tr>
<th>Institution</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial banks</td>
<td>State and national banks that provide checking and savings accounts,</td>
<td>J.P. Morgan Chase, Bank of America, Citibank,</td>
</tr>
<tr>
<td></td>
<td>sell certificates of deposit, and make loans. The Federal Deposit</td>
<td>Wells Fargo, Wachovia</td>
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<tr>
<td></td>
<td>Insurance Corporation (FDIC) insures checking and savings accounts up to</td>
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<td></td>
<td>$100,000.</td>
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<tr>
<td>Thrifts</td>
<td>Savings and loan associations (S&amp;Ls), mutual saving banks, and credit</td>
<td>Washington Mutual, Golden State (owned by</td>
</tr>
<tr>
<td></td>
<td>unions that offer checking and savings accounts and make loans.</td>
<td>Citigroup), Golden West (owned by Wachovia),</td>
</tr>
<tr>
<td></td>
<td>Historically, S&amp;Ls made mortgage loans for houses while mutual savings</td>
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<td></td>
<td>banks and credit unions made small personal loans, such as automobile</td>
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<td></td>
<td>loans. Today, major thrifts offer the same range of banking services as</td>
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<tr>
<td></td>
<td>commercial banks. The Federal Deposit Insurance Corporation and the National</td>
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<td></td>
<td>Credit Union Administration insure checking and savings deposits up to $100,000.</td>
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<tr>
<td>Insurance companies</td>
<td>Firms that offer policies (contracts) through which individuals pay premiums</td>
<td>Prudential, New York Life, Massachusetts</td>
</tr>
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<td></td>
<td>to insure against some loss, say, disability or death. In some life</td>
<td>Mutual, Putnam, Dreyfus, Kemper</td>
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<td>insurance policies and annuities, the funds are invested for the client in</td>
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<td></td>
<td>stocks and bonds and paid back after a specified number of years. Thus,</td>
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<td>insurance sometimes has a saving or financial-investment element.</td>
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<tr>
<td>Mutual fund companies</td>
<td>Firms that pool deposits by customers to purchase stocks or bonds (or both).</td>
<td>Fidelity, Vanguard, Putnam, Dreyfus, Kemper</td>
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<td></td>
<td>Customers thus indirectly own a part of a particular set of stocks or bonds,</td>
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<tr>
<td></td>
<td>say stocks in companies expected to grow rapidly (a growth fund) or bonds</td>
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<td></td>
<td>issued by state governments (a municipal bond fund).</td>
<td></td>
</tr>
<tr>
<td>Pension funds</td>
<td>For-profit or nonprofit institutions that collect savings from workers (or</td>
<td>TIAA-CREF, Teamsters’ Union</td>
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<td></td>
<td>from employers on their behalf) throughout their working years and then</td>
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<td>buy stocks and bonds with the proceeds and make monthly retirement payments.</td>
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<tr>
<td>Securities firms</td>
<td>Firms that offer security advice and buy and sell stocks and bonds for clients.</td>
<td>Merrill Lynch, Smith Barney, Lehman Brothers,</td>
</tr>
<tr>
<td></td>
<td>More generally known as stock brokerage firms.</td>
<td>Charles Schwab</td>
</tr>
<tr>
<td>Investment banks</td>
<td>Firms that help corporations and governments raise money by selling stocks</td>
<td>Goldman Sachs, Bain Capital, Morgan Stanley,</td>
</tr>
<tr>
<td></td>
<td>and bonds. They also typically offer advisory services for corporate</td>
<td>Deutsche Bank, Nomura Securities</td>
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<tr>
<td></td>
<td>mergers and acquisitions as well as brokerage services and advice.</td>
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</table>

Convergence of Services Provided by Financial Institutions

In 1996 Congress greatly loosened the Depression-era prohibition against banks selling stocks, bonds, and mutual funds, and it ended the prohibition altogether in the Financial Services Modernization Act of 1999. Banks, thrifts, pension companies, insurance companies, and securities firms can now merge with one another and sell each other’s products. Thus, the lines between the subsets of the financial industry are beginning to blur. Many banks have acquired stock brokerage firms and, in a few cases, insurance companies. For example, Citigroup now owns Smith Barney, a large securities firm. Many large banks (for example, Wells Fargo) and pension funds (for example, TIAA-CREF) now provide mutual funds, including money market funds that pay relatively high interest and on which checks of $500 or more can be written.

The lifting of restraints against banks and thrifts should work to their advantage because they can now provide their customers with “one-stop shopping” for financial services. In general, the reform will likely intensify competition and encourage financial innovation. The downside is that financial losses in securities subsidiaries—such as could occur during a major recession—could increase the number of bank failures. Such failures might undermine confidence in the entire banking system and complicate the Fed’s task of maintaining an appropriate money supply.

Globalization of Financial Markets

Another significant banking development is the increasing integration of world financial markets. Major foreign financial institutions now have operations in the United States, and U.S. financial institutions do business abroad. For example, Visa, MasterCard, and American Express offer worldwide credit card services. Moreover, U.S. mutual fund companies now offer a variety of international stock and bond funds. Globally, financial capital increasingly flows in search of the highest risk-adjusted returns. As a result, U.S. banks increasingly compete with foreign banks for both deposits and loan customers.

Recent advances in computer and communications technology are likely to speed up the trend toward international
financial integration. Yet the bulk of investment in the major nations is still financed through domestic saving within each nation.

**Electronic Payments**

Finally, the rapid advance of new payment forms and Internet “banking” is of great significance to financial institutions and central banks. Households and businesses increasingly use **electronic payments**, not currency and checks, to buy products, pay bills, pay income taxes, transfer bank funds, and handle recurring mortgage and utility payments.

Several electronic-based means of making payments and transferring funds have pushed currency and checks aside. **Credit cards** enable us to make immediate purchases using credit established in advance with the card provider. In most cases, a swipe of the credit card makes the transaction electronically. Credit card balances can be paid via the Internet, rather than by sending a check to the card provider. **Debit cards** work much like credit cards but, since no loan is involved, more closely resemble checks. The swipe of the card authorizes an electronic payment directly to the seller from the buyer’s bank account.

Other electronic payments include **Fedwire** transfers. This system, maintained by the Federal Reserve, enables banks to transfer funds to other banks. Individuals and businesses can also “wire” funds between financial institutions, domestically or internationally. Households can “send” funds or payments to businesses using **automated clearinghouse transactions** (ACHs). For example, they can make recurring utility and mortgage payments and transfer funds among financial institutions. The ACH system also allows sellers to scan checks at point of sale, convert them to ACH payments, and move the funds immediately from the buyer’s checking account to the seller’s checking account. Then the seller immediately hands the check back to the customer.

Some experts believe the next step will be greater use of **electronic money**, which is simply an entry in an electronic file stored in a computer. Electronic money will be deposited, or “loaded,” into an account through electronic deposits of paychecks, retirement benefits, stock dividends, and other sources of income. The owner of the account will withdraw, or “unload,” the money from his or her account through Internet payments to others for a wide variety of goods and services. PayPal—used by 164 million account holders in 190 countries—roughly fits this description, and is familiar to eBay users. Buyers and sellers establish accounts based on funds in checking accounts or funds available via credit cards. Customers then can securely make electronic payments or transfer funds to other holders of PayPal accounts.

In the future, the public may be able to insert so-called **smart cards** into card readers connected to their computers and load electronic money onto the card. These plastic cards contain computer chips that store information, including the amount of electronic money the consumer has loaded. When purchases or payments are made, their amounts are automatically deducted from the balance in the card’s memory. Consumers will be able to transfer traditional money to their smart cards through computers or cell phones or at automatic teller machines. Thus, it will be possible for nearly all payments to be made through the Internet or a smart card.

A few general-use smart cards with embedded programmable computer chips are available in the United States, including cards issued by Visa, MasterCard, and American Express (“Blue Cards”). More common are **stored-value cards**, which facilitate purchases at the establishments that issued them. Examples are prepaid phone cards, copy-machine cards, mass-transit cards, single-store gift cards, and university meal-service cards. Like the broader smart cards, these cards are “reloadable,” meaning the amounts stored on them can be increased. A number of retailers—including FedEx stores, Sears, Starbucks, Walgreens, and Wal-Mart—make stored-value cards available to their customers.

Electronic money also appears poised to make a big impact in developing countries where bank branches are few and far between. Companies like M-PESA in Kenya, Wizzit in South Africa, and G-Cash in the Philippines are now taking advantage of the fact that while those countries have few banks, they have extensive cellular phone networks. Cell phone subscribers can deposit cash at cell phone stores and then freely send each other electronic payments using their phones. Customers receiving payments can use the electronic money that they receive to make further electronic payments or, if they like, withdraw the money for cash at their local cell phone store. The safety and convenience of these systems is expected to be a substantial boost to local consumers and businesspeople.

### QUICK REVIEW 31.3

- The Federal Reserve System consists of the Board of Governors and 12 Federal Reserve Banks.
- The 12 Federal Reserve Banks are publicly controlled central banks that deal with banks and thrifts rather than with the public.
- The Federal Reserve’s major role is to regulate the supply of money in the economy.
- Recent developments in banking are the (a) relative decline in traditional banking; (b) consolidation within the banking industry; (c) convergence of services offered by banks, thrifts, insurance companies, pension funds, and mutual funds; (d) globalization of banking; and (e) widespread emergence of electronic transactions.
A Large Amount of U.S. Currency Is Circulating Abroad.

Like commercial aircraft, computer software, and movies, American currency has become a major U.S. “export.” Russians hold about $80 billion of U.S. currency and Argentinians hold $50 billion. The Turkish government estimates that $10 billion of U.S. dollars is circulating in Turkey. In all, an estimated $450 billion of U.S. currency is circulating abroad. That amounts to about 60 percent of the total U.S. currency held by the public.

Dollars leave the United States when Americans buy imports, travel in other countries, or send dollars to relatives living abroad. The United States profits when the dollars stay in other countries. It costs the government about 4 cents to print a dollar. For someone abroad to obtain that new dollar, $1 worth of resources, goods, or services must be sold to Americans. These commodities are U.S. gains. The dollar goes abroad and, assuming it stays there, presents no claim on U.S. resources or goods or services. Americans in effect make 96 cents on the dollar (− $1 gain in resources, goods, or services − the 4-cent printing cost). It’s like American Express selling traveler’s checks that never get cashed.

Black markets and other illegal activity undoubtedly fuel some of the demand for U.S. cash abroad. The dollar is king in covert trading in diamonds, weapons, and pirated software. Billions of cash dollars are involved in the narcotics trade. But the illegal use of dollars is only a small part of the story. The massive volume of dollars in other nations reflects a global search for monetary stability. On the basis of past experience, foreign citizens are confident that the dollar’s purchasing power will remain relatively steady.

Following the collapse of the Soviet Union in the early 1990s, high rates of inflation led many Russians to abandon rubles for U.S. dollars. While the dollar retained its purchasing power in Russia, the purchasing power of the ruble plummeted. As a result, many Russians still hold large parts of their savings in dollars today. Recently, however, some Russians have transferred part or all of their holdings of dollars to euros.

In Brazil, where inflation rates above 1000% annually were once common, people have long sought the stability of dollars. In the shopping districts of Beijing and Shanghai, Chinese consumers trade their domestic currency for dollars. In Bolivia half of all bank accounts are denominated in dollars. There is a thriving “dollar economy” in Vietnam, and even Cuba has partially legalized the use of U.S. dollars. The U.S. dollar is the official currency in Panama and Liberia. Immediately after the invasion of Iraq in 2003, the purchasing power of the Iraqi dinar fell dramatically because the looting of banks placed many more dinars into circulation. The United States and British forces began paying Iraqi workers in U.S. dollars, and dollars in effect became the transition currency in the country.

Is there any financial risk for people who hold dollars in foreign countries? While the dollar is likely to hold its purchasing power internally in those nations, holders of dollars do face exchange-rate risk. If the international value of the dollar depreciates, as it did from 2005 to 2007, more dollars are needed to buy goods imported from countries other than the United States. Those goods, priced in, say, euros, Swiss francs, or yen, become more expensive to holders of dollars. Offsetting that “downside risk,” of course, is the “upside opportunity” of the dollar’s appreciating.

There is little risk for the United States in satisfying the world’s demand for dollars. If all the dollars came rushing back to the United States at once, the nation’s money supply would surge, possibly causing demand-pull inflation. But there is not much chance of that happening. Overall, the global greenback is a positive economic force. It is a reliable medium of exchange, unit of account, and store of value that facilitates transactions that might not otherwise occur. Dollar holdings have helped buyers and sellers abroad overcome special monetary problems. The result has been increased output in those countries and thus greater output and income globally.
## Summary

1. Anything that is accepted as (a) a medium of exchange, (b) a unit of monetary account, and (c) a store of value can be used as money.

2. There are two major definitions of the money supply. $M_1$ consists of currency and checkable deposits; $M_2$ consists of $M_1$ plus savings deposits, including money market deposit accounts, small (less than $100,000) time deposits, and money market mutual fund balances held by individuals.

3. Money represents the debts of government and institutions offering checkable deposits (commercial banks and thrift institutions) and has value because of the goods, services, and resources it will command in the market. Maintaining the purchasing power of money depends largely on the government’s effectiveness in managing the money supply.

4. The U.S. banking system consists of (a) the Board of Governors of the Federal Reserve System, (b) the 12 Federal Reserve Banks, and (c) some 7300 commercial banks and 11,000 thrift institutions (mainly credit unions). The Board of Governors is the basic policymaking body for the entire banking system. The directives of the Board and the Federal Open Market Committee (FOMC) are made effective through the 12 Federal Reserve Banks, which are simultaneously (a) central banks, (b) quasi-public banks, and (c) bankers' banks.

5. The major functions of the Fed are to (a) issue Federal Reserve Notes, (b) set reserve requirements and hold reserves deposited by banks and thrifts, (c) lend money to banks and thrifts, (d) provide for the rapid collection of checks, (e) act as the fiscal agent for the Federal government, (f) supervise the operations of the banks, and (g) regulate the supply of money in the best interests of the economy.

6. The Fed is essentially an independent institution, controlled neither by the president of the United States nor by Congress. This independence shields the Fed from political pressure and allows it to raise and lower interest rates (via changes in the money supply) as needed to promote full employment, price stability, and economic growth.

7. Between 1980 and 2007, banks and thrifts lost considerable market share in the financial services industry to pension funds, insurance companies, mutual funds, and securities firms. Other recent banking developments of significance include the consolidation of the banking and thrift industry; the convergence of services offered by banks, thrifts, mutual funds, investment banks, securities firms, and pension companies; the globalization of banking services; and the emergence of the Internet and electronic payments.

## Terms and Concepts

| medium of exchange | commercial banks |
| store of value | thrift institutions |
| liquidity | near-mones |
| $M_1$ | $M_2$ |
| Federal Reserve Notes | savings account |
| token money | money market deposit account (MMDA) |
| checkable deposits | time deposits |
| | money market mutual fund (MMMF) |
| | legal tender |
| | Federal Reserve System |
| | Board of Governors |
| | Federal Reserve Banks |
| | Federal Open Market Committee (FOMC) |
| | financial services industry |
| | electronic payments |

## Study Questions

1. What are the three basic functions of money? Describe how rapid inflation can undermine money's ability to perform each of the three functions. **LO1**

2. Which two of the following financial institutions offer checkable deposits included within the $M_1$ money supply: mutual fund companies; insurance companies; commercial banks; securities firms; thrift institutions? Which of the following is not included in either $M_1$ or $M_2$: currency held by the public; checkable deposits; money market mutual fund balances; small (less than $100,000) time deposits; currency held by banks; savings deposits. **LO1**

3. Explain and evaluate the following statements: **LO2**
   a. The invention of money is one of the great achievements of humankind, for without it the enrichment that comes from broadening trade would have been impossible.
   b. Money is whatever society says it is.
   c. In most economies of the world, the debts of government and commercial banks are used as money.
d. People often say they would like to have more money, but what they usually mean is that they would like to have more goods and services.

e. When the price of everything goes up, it is not because everything is worth more but because the currency is worth less.

f. Any central bank can create money; the trick is to create enough, but not too much, of it.

4. **KEY QUESTION** What are the components of the M1 money supply? What is the largest component? Which of the components of M1 is legal tender? Why is the face value of a coin greater than its intrinsic value? What near-monies are included in the M2 money supply? **LO1, LO2**

5. What “backs” the money supply in the United States? What determines the value (domestic purchasing power) of money? How does the purchasing power of money relate to the price level? Who in the United States is responsible for maintaining money’s purchasing power? **LO2**

6. **KEY QUESTION** Suppose the price level and value of the dollar in year 1 are 1 and $1, respectively. If the price level rises to 1.25 in year 2, what is the new value of the dollar? If, instead, the price level falls to .50, what is the value of the dollar? What generalization can you draw from your answers? **LO2**

7. How is the chairperson of the Federal Reserve System selected? Describe the relationship between the Board of Governors of the Federal Reserve System and the 12 Federal Reserve Banks. What are the composition and purpose of the Federal Open Market Committee (FOMC)? **LO3**

8. **KEY QUESTION** What is meant when economists say that the Federal Reserve Banks are central banks, quasi-public banks, and bankers’ banks? What are the seven basic functions of the Federal Reserve System? **LO4**

9. Following are two hypothetical ways in which the Federal Reserve Board might be appointed. Would you favor either of these two methods over the present method? Why or why not? **LO3**

a. Upon taking office, the U.S. president appoints seven people to the Federal Reserve Board, including a chair. Each appointee must be confirmed by a majority vote of the Senate, and each serves the same 4-year term as the president.

b. Congress selects seven members from its ranks (four from the House of Representatives and three from the Senate) to serve at its pleasure as the Board of Governors of the Federal Reserve System.

10. What are the major categories of firms that make up the U.S. financial services industry? Did the bank and thrift share of the financial services market rise, fall, or stay the same between 1980 and 2007? Are there more or fewer banks today than a decade ago? Why are the lines between the categories of financial firms becoming more blurred than in the past? **LO3**

11. How does a debit card differ from a credit card? How does a stored-value card differ from both? Suppose that a person has a credit card, debit card, and stored-value card. Create a fictional scenario in which the person uses all three cards in the same day. Explain the person’s logic for using one card rather than one of the others for each transaction. How do Fedwire and ACH transactions differ from credit card, debit card, and stored-value card transactions? **LO1**

12. **LAST WORD** Over the years, the Federal Reserve Banks have printed many billions of dollars more in currency than U.S. households, businesses, and financial institutions now hold. Where is this “missing” money? Why is it there?

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**Web-Based Questions**

1. **WHO ARE THE MEMBERS OF THE FEDERAL RESERVE BOARD?** The Federal Reserve Board Web site, www.federalreserve.gov/BIOS, provides detailed biographies of the seven members of the Board of Governors. What is the composition of the Board with regard to age, gender, education, previous employment, and ethnic background? Which Board members are near the ends of their terms?

2. **CURRENCY TRIVIA** Visit the Publications page of the Federal Reserve Bank of Atlanta, www.frbatlanta.org/publica/pubs_index.cfm. Scroll down the page and click on the link that reads *Dollars and Cents: Fundamental Facts about U.S. Money*. Use the information you find to answer the following questions: What are the denominations of Federal Reserve Notes now being printed? What was the largest-denomination Federal Reserve Note ever printed and circulated, and when was it last printed? What are some tips for spotting counterfeit currency? When was the last silver dollar minted? What have been the largest and smallest U.S. coin denominations since the Coinage Act of 1792?